

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning on line 20 of page 7 with the following rewritten paragraph:

The DMD mirrors 14a typically range from 10 um to 16 um square and made of aluminum for maximum reflectivity. They are arrayed on 11 um to 17 um centers to form a dense matrix of pixels. The hinge layer 13 under the mirrors 14a permits a close spacing of the mirrors 14a, and because of the underlying placement of the hinges, an array of pixel elements 10 is referred to as a "hidden hinge" type DMD architecture.

Please replace the paragraph beginning on line 5 of page 9 with the following rewritten paragraph:

A spacer layer 21, identified as S1, is then deposited over the M3 layer 12 ~~[[11]]~~. Spacer layer 21 may be formed from hardened photoresist. Later in the packaging flow, this spacer layer 21 is plasma-ashed to form an air gap. A number of vias are then formed in spacer layer 21, formed by conventional pattern and etching techniques.

Please replace the paragraph beginning on line 16 of page 9 with the following rewritten paragraph:

FIGURES 4 - 6 illustrate fabrication of hinge layer 13. As explained below, hinge layer 13 contains both hinge 13a, spring tips 13b, and spring tip beams 13c (shown in Figures 1 and 7) from which the spring tips extend.

Please replace the paragraph beginning on line 26 of page 9 with the following rewritten paragraph:

FIGURE 5 illustrates a portion of the partially fabricated DMD having a via 31, similar to vias 32 ~~[[1-0f]]~~ and 33 of Figure 3, and the result of a patterned etch process. The etch leaves an oxide coating within the via ~~[[s]] 31, 32, or 33~~. The oxide at the bottom of the vias covers the thin metal at the bottom of each via, thereby providing strengthening. A develop rinse is then performed, or other cleanup to remove residue and prevent surface contamination. As an

alternative to a patterned etch, a blanket etch could be used, which would tend to leave the oxide on the via side walls. As an alternative to oxide layer 42, a metal material rather than oxide could be deposited.

Please replace the paragraph beginning on line 14 of page 10 with the following rewritten paragraph:

FIGURE 7 is a perspective view of the surface of the patterned hinge layer 13. The various vias 31, 32, 33 are shown, as well as a mirror via pad 71, upon which the mirror via 14b[[a]] will end. ~~[[Referring again to FIGURE 1, t]]~~ The vias 31, 32, 33, now filled with deposited oxide material, will form support posts after the spacer layer 21 is removed. Two spring tips 13b[[e]] are located under each of the two tilting corners of mirror 14a. In the embodiment of FIGURE 7, the hinge 13a and spring tips 13b form a continuous pattern with the two spring tip beams 13c [[b]] extending at an angle from each end of hinge 13a, but other patterns are possible.

Please replace the paragraph beginning on line 26 of page 10 with the following rewritten paragraph:

As illustrated in FIGURE 7, the hinge layer pattern includes a “mirror via seat” 71a within each mirror via pad 71. This seat is a small circular trough in each pad 71. As explained below in connection with FIGUREs 12 and 13, the mirror via seat helps to anchor the mirror support post (via) 14b to pad 71.

Please replace the paragraph beginning on line 7 of page 11 with the following rewritten paragraph:

FIGURE 9 illustrates deposition of metal mirror layer 14 ~~[[94]]~~, from which mirror 14a is patterned. A typical thickness for mirror layer 14 ~~[[94]]~~ is 3300 angstroms. The metal for mirror

layer 14 [[94]] is typically aluminum or an alloy of aluminum. As explained below, the metal layer coats the inner walls of vias [[14b]], which are designed for good adhesion of the metal to the via and to the surface at the bottom of the via.

Please replace the paragraph beginning on line 15 of page 11 with the following rewritten paragraph:

FIGURE 10 illustrates deposition of a mirror patterning layer 101, which is used to pattern mirror 14a. Mirror layer 14 [[94]] is patterned and etched, leaving the mirror 14a of FIGURE 1.

Please replace the paragraph beginning on line 7 of page 13 with the following rewritten paragraph:

In other embodiments, the via seat could be shallower, that is, it might not go all the way through the thickness of pad 71. Also, in other embodiments, via seat 121 could have a geometry other than circular; its patterning could be for any shape etched into the underlying pad 71 (or other portion of layer 13). The circumference of the via seat relative to the via opening may vary. A further embodiment, with a via seat surrounding a via pad is described below in connection with FIGURE 14. For the general case, where the via seat is patterned into any portion of layer 13 (shown only as via pad 71 in Figures 12-14), the via seat may be designed for whatever combination of adhesion to the top of layer 13, sidewalls into layer 13, and undercut under layer 13 best anchors the via.

Please replace the paragraph beginning on line 21 of page 13 with the following rewritten paragraph:

FIGURE 13 is the same view as FIGURE 12, but after the mirror patterning (mirror metal) layer 14 [[94]] has been deposited over spacer layer 81. The mirror metal has adhered to

the top surface of spacer layer 81, the sidewalls of the mirror via opening 120 (shown in Figure 12), and the sidewalls and bottom of the mirror via seat 121 (shown in Figure 12). Material has also filled the undercut in the spacer layer 21. The metal on the top of spacer layer 81 forms the mirrors 14a; the metal within the via opening and via seat forms the mirror vias 14b. The spacer layer 81 will eventually be removed, so that each mirror via 14b supports its mirror 14a onto mirror via pad 71.

Please replace the paragraph beginning on line 17 of page 14 with the following rewritten paragraph:

The formation of mirror via seat 121 and its metal coating provide improved support for mirror via 14b, as compared to designs in which there is no mirror via seat 121 (shown in Figure 12). Another benefit is stress relief of hinge layer 13.

Please replace the paragraph beginning on line 21 of page 14 with the following rewritten paragraph:

FIGURE 14 illustrates a via seat 140 that is patterned around a pad 71 of layer 13 (shown in Figure 7), and filled with material to form a via anchor 141. The via seat 140 overlaps the pad 71 completely or partially, for example, by etching a pad 71 that is smaller than the via opening. The deposited material enters the area around the pad 71 and any undercut into layer 21. In effect, the deposited material forms a ring or partial ring as the via anchor 141.

Please replace the paragraph beginning on line 1 of page 15 with the following rewritten paragraph:

For the embodiment of FIGURE 14, in the case of a micromirror device, the result is a via 14b that "hugs" the sides of pad 71 ~~hinge 13b~~. Further in the case of the micromirror device, the "pad" could simply be a straight portion in the middle of the hinge.

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